

Effect of Climate Factors on Occurrence of Diarrhea in Dak Lak Province, Vietnam, 2004-2010

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Background: Studies have reported seasonal fluctuation in the occurrence of diarrhea. However, these studies did not address the direct association between climate factors and diarrhea. Clarifying the potential role of climate factors in the occurrence of diarrhea could provide an insight into the mechanisms of the seasonality of the disease. The present study sought to describe and analyze the effect of climate factors on diarrhea.

Methods: The study included the monthly total of diarrhea episodes reported among persons seeking treatment at all commune health stations and hospitals of the 13 districts of Dak Lak province (total population: 1.7 million). Diarrhea was reported as the passage of three or more loose or liquid stools per day. Temperature, sunshine, rainfall and humidity were recorded as monthly averages by local meteorological offices. The association between these climatic factors and diarrhea was assessed by using regression model.

Results: From 2004 through 2010, 151,566 episodes of diarrhea were reported. The occurrence of diarrhea was higher during from March through June, with 40% of cases. In the multivariable regression analysis, increased temperature (RR=1.07; 95%CI: 1.04–1.10 per each 1.50C increase in temperature), increased sunshine (RR=1.10; 95% CI: 1.04–1.17 per 50 hours increase in sunshine), and increased rainfall (RR=1.07; 95% CI: 1.01-1.14 per 150 mm increase in rainfall) were independently associated with the increased occurrence of diarrhea.

Conclusions: These data suggest that temperature, sunshine and rainfall could be used as ecological indicators of diarrhea risk in Vietnam's Central Highlands region. Intensified surveillance and control of acute diarrhea during March through June are recommended. The data also suggest that the occurrence of diarrhea in this region is likely a result from multiple causes which remain to be delineated. Keywords: diarrhea, climate factors, seasonality, regression model, Vietnam

The association between using mask with respiratory physiological disorder related to merapi volcanic ash exposure in 2010

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Background: Mount Merapi in Central Java, Indonesia erupted on October 25, 2011 and up until the second week of November, has spewed thousands of volcanic material including volcanic ash to the surrounding areas. The ash was widely inhaled by people in the affected areas, causing respiratory physiological disorder. This cross-sectional study was conducted in the Sedayu village, Magelang district, Central Java Province, on March 2011, to determine the prevalence rate of respiratory disorder due to volcanic ash exposure and its relationship with mask use.